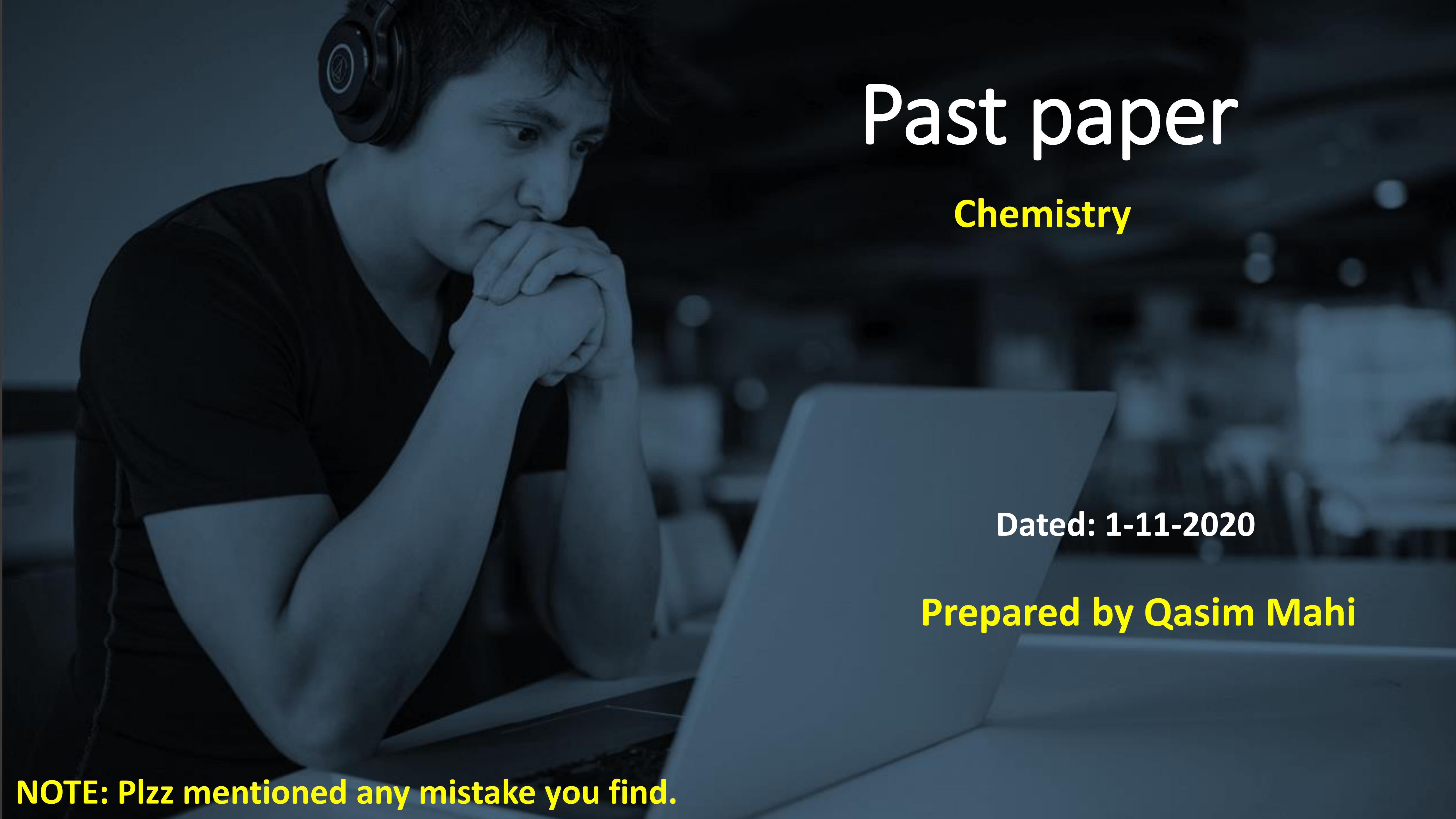


Past paper

Chemistry

Dated: 1-11-2020

Prepared by Qasim Mahi

NOTE: Plzz mentioned any mistake you find.

Lecturer chemistry paper %age by fields

Physical chemistry: 26……………..32.5%

Inorganic chemistry: 14…………..17.5%

Organic chemistry: 8………………..10%

Analytical chemistry: 6……………..7.5%

bio chemistry: 7…………………………8.75%

Environment chemistry: 8………...10%

Stereo chemistry: 3……………………3.75%

Spectroscopy: 5…………………………..6.5%

Salt analysis/practical: 3……………..7.5%

FSc %age = 25%

Physical chemistry: Thermodynamics/chemical thermodynamics:

Q.1 Entropy change for a reversible process is

$$ds = 0$$

Q. 2 Partial pressure replaced by mechanical pressure is called

Fugacity

Q. 3 X2 =2Y, at 600K, Kc=10^-6, reaction is

endothermic

Electrochemistry

Q. 4 $Zn + Cu^{++} \rightarrow Zn^{++} + Cu$ $\dot{E}_{cell} = ?$

1.10v

Chemical equilibrium

Q. 5 Ph of humane stomach is

2 ans but 1.5 to 3.5

Q. 75 catalyst used in contact process?

V_2O_5

Q.6 Van't Hoff equation is given as

$$\frac{d}{dT}\ln K_{eq} = \frac{\Delta H^{\ominus}}{RT^2}$$

Q. 7 Relationship between K_{eq} and T . OR effect of temperature on kc study by

Van't Hoff equation

Q. 8 Effect of temperature on Kc is studied by:

Van't Hoff equation

Q. 9 Arsenic oxide is removed by using...... in contact process.

Ferric hydroxide

Q. 10 Incorrect statement about contact process:

No lead lining

Q. 11 Buffer not found in body is :

Acetic acid buffer

Solids questions 2020

Q. 12 In graphite each carbon is surrounded by

3 carbon atoms

Q. 13 -Which of the following is body centered?

Mo

Q. 14 Which of the following exists as orthorhombic and trigonal:

$CaCO_3$

LIQUID

Q. 15 Falling drop of H_2O is spherical due to

Surface tension

Gases

No

Colloidal solution:

Q. 16 The path of the light become visible as a result of Scattering of light is due to

Tyndall effect

Q. 17 Incorrect statement about chemisorption

Not forms multilayer

Solutions

Q. 18 molarity of 25% NaOH?

6.25M

Atomic structure

Q. 19 Ballmer series lies in.

visible region

Q. 20 $\lambda = 2$ Å **p = ?**

$3.315 \times 10^{-24} kgms^{-1}$

Q.21 Light travel discontinuously this concept given by

Max Planck's

Q. 22 Value of r for 3rd orbital of H.

4.75 Å

Chemical kinetics

Q. 23 unit of rate constant for 3^{rd} order reaction.

$$dm^6 . mol^{-2} . s^{-1}$$

Q. 24 Expression of half life?

$$t_{1/2} \propto \frac{1}{a^{n-1}}$$

Q. 25 E_a = ? **Slope = -5400k**

$$103.41\ kjmol^{-1}$$

Inorganic chemistry Periodic table

Q.26 Radioactive lanthanide is

Pm

Q. 27 Hydroxide of..... is more soluble in water

k

Q. 28 Zn+2 and Bi+3 color on heating and cooling,

Yellow when hot and white when cold

Q. 29 Tip of match.

S + $kClo_3$

Transition elements

Q. 30 Which is not follow EAN rule?

Ans: K_4 { $Mn(CH)_6$ }

Stoichiometric calculations

Q. 31 Mass of Al deposited by 8 mole of electrons is:

72g

The number of moles of electrons required to deposit 36 g of Al from an aqueous solution

Answer

Correct option is (A) 4

The mass of Al in 1 mol of $Al(NO_3)_3$ is the 27 g.

And, for 1 mol of Al (27 g), 3 mol of electrons are required to deposit 27 g of Al.

As 3 mole of electrons required to deposit $\longrightarrow 27g$ of Al

so for 36 g $\longrightarrow 36 \times \frac{3}{27} = \frac{36}{9} = 4$ moles

Hence, option A is correct.

Acid base concept

Q. 32 According to Usanovich concept Acid is?

a) Capable of forming cation
b) Combine with anion
c) Neutralize base to give salt
d) All of these

Q. Question about soft and hard acid?

Chemical bonding

Q. 33 The geometry square planner is associated which of the following

AX_4E_2

Q. 34 Isostructural compounds are

XeF2, IF2-✓

Q. 35 bond angle in O3 is

118

Nuclear chemistry

Q. 36 In H-bomb reaction involves?

fusion of deuteron and tritium

Q. 37 He on nuclear fission gives?

positron and neutron

Salt analysis/practical

Q. 38 Ni spoon is not dipped in:

Fe+3

Q. 39 Locating reagent not used for metals.

NH4S

Q. 40 the reagent used for the detection of group V metals.

NH4OH+NH4Cl+NH4CO3

Analytical chemistry

Titration

Q.41 $Na_2S_2O_3$ is iodically titrated against

$K_2Cr_2O_7$

Q. 42 True statement about distribution coefficient is

it doesn't depend on mass of solute

Q. 43 Which is not true about GC MS?

Gas chromatography–mass spectrometry is an analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample

Q.44 indicator used in argentometric titration for the study of chloride is

Dichlorofluroseine

Q. Biological sample can be analyzed through

HPLC

Q. 45 Reaction conditions: V205 catalyst at 450 degree are suitable for:

Oxidation of benzene

Alkyl halides

Q. 46 Sand Meyer reaction*

The **Sand Meyer reaction** is a chemical **reaction** used to synthesize aryl halides from aryl diazonium salts using copper salts as reagents or catalysts

Q. 47 1-chlorobutane reaction with alcoholic KOH

1-butene

Ethers

Q.48 -Which of the following method involves the preparation of ethers by deprotonation of alcohol and alkyl halide

Williamson synthesis

Q. 49-Which of the following is not method of preparation of ethers?

Oximurcuration demurcuration

ALCOHOL

Q. 50 identification of alcohol in petrol is done by

Gentian violet dye, methyl violet 10B or hexamethyl pararosaniline chloride

Amines

Q.51 Identification test for primary, secondary and tertiary amines?

Hinsberg test.

Amino acids

Q. 52 which Amino acid not prepared our body

Stereochemistry

Q. 53 possible isomers of C4H80 ?

10

Q.54 Question about enantiomer properties

All

Q. 55 Optically active compound with 3 asymmetric center would have possible isomers?

8

Chiral centers will have 2^n possible

The molecular formula **C_4H_8O** may refer to:

- Butanone
- Butyraldehyde
- Crotyl alcohol
- Cyclobutanol
- 1,2-Epoxybutane
- 2,3-Epoxybutane
- Ethyl vinyl ether
- Isobutyraldehyde
- 2-Methoxypropene
- Tetrahydrofuran

Biochemistry

Q. 56 Which buffer is not present in humane body

Acetic acid buffer

Q.57 Components of Dacron are:

Ethylene glycol, Terephtalic acid

Q. 58 Cellulose is not digested due to absence

B-glycosidase

Q. Soft soap is prepared by using NaOH called

Saponification

Q. 59-Rncidity is:

Oxidation of fats

Q. 60 Vitamin B12 deficiency causes:

Glossitis

Q. 61 Dacron is polymer

ethylene glycol + Terephtalic acid

Environment chemistry

Q. 62 According to NIOSH, Ozone levels dangerous to life or health is

5ppm

Q. 63 Foul smell in tanky of water is due to

methane, hydrogen sulphate and ammonia

Q. 64 conc. Of ozone which is safe in atmosphere in ppm is

0.3ppm

Q. 65 WHICH of the following causes ozone depletion

a) NO
b) N2O
c) Br ATOM
d) All

Q. 66 Range of stratosphere.

15 – 50 km

Q. 67 Normally rain is acidic due to.

CO_2

Q. 68 Which is not green house gas.

CO

Q. 69 Thickness of atmosphere is

1000km

Spectroscopy:

Q. 70 Precessional frequency is give by the formula of

$$v = \Upsilon Ho/2\pi$$

Q. 71 When a substance show the phenomenon of phosphorescence then the wavelength ranges is

10^{-3} to 10^{2} sec

Q. 72 Solvent not used in IR is:

Water

Q.73 Which of the following is used as a source of radiations in FTIR?

Si carbide rod

Q. 74 Shifting of spectral lines in region of lower wavelength.

Hypsochromic effect